

What is Claimed is:

1           1. A computer-implemented method for reconciling a first transaction in  
2 a first list with a combination of at least two transactions in a second list, each  
3 transaction having a value, the method comprising:  
4           obtaining the first transaction;  
5           obtaining the second list of transactions;  
6           determining whether the value of the first transaction corresponds to a  
7                       combination of the values of a subset of transactions in the  
8                       second list; and  
9           responsive to the value corresponding to the combination of values,  
10                       indicating a match between the first transaction and the subset  
11                       of transactions.

1           2. The method of claim 1, wherein each transaction comprises one  
2 selected from the group consisting of an investment transaction, a financial  
3 transaction, and an accounting transaction.

1           3. The method of claim 1, wherein determining whether the value of the  
2 first transaction corresponds to a combination of the values of a subset of  
3 transactions in the second list comprises determining whether the value of the  
4 first transaction corresponds to a sum of the values of a subset of transactions in  
5 the second list.

1           4. The method of claim 1, wherein at least one of the steps of obtaining  
2 the first transaction and obtaining the second list comprises downloading  
3 transactions from a remote server.

1           5. The method of claim 1, wherein at least one of the steps of obtaining  
2 the first list and obtaining the second list comprises retrieving transactions from  
3 a storage device.

1           6. The method of claim 1, further comprising:  
2           determining whether the value of the first transaction corresponds to a  
3           value of a transaction in the second list; and  
4           responsive to the value of the first transaction corresponding to the value  
5           of a transaction in the second list, indicating a match between  
6           the first transaction and the transaction having the  
7           corresponding value;

8           and wherein the step of determining whether the value of the first  
9 transaction corresponds to a combination of the values of a subset of  
10 transactions in the second list is performed responsive to the value of the first  
11 transaction not corresponding to the value of a transaction in the second list.

1           7. The method of claim 1, wherein each transaction has a date, and  
2   wherein obtaining the second list comprises obtaining a list of transactions  
3   having dates identical to the date of the first transaction.

1           8. The method of claim 1, wherein each transaction has a date, and  
2   wherein obtaining the second list comprises obtaining a list of transactions  
3   having dates within a specified time period of the date of the first transaction.

1           9. The method of claim 8, further comprising, responsive to the value of  
2   the first transaction not corresponding to a combination of the values of a subset  
3   of transactions in the second list:

4           modifying the specified time period; and

5           repeating the steps of obtaining the second list, determining whether the  
6           value of the first transaction corresponds to a combination of  
7           the values of a subset of transactions in the second list, and,  
8           responsive to the value corresponding to the combination of  
9           values, indicating a match between the first transaction and the  
10          subset of transactions.

1           10. The method of claim 1, wherein determining whether the value of the  
2   first transaction corresponds to a combination of the values of a subset of  
3   transactions in the second list comprises performing a recursive submethod

4 using a first input parameter including the value of the first transaction and a  
5 second input parameter including the set of transactions in the second list.

1 11. The method of claim 10, wherein performing the recursive submethod  
2 comprises:

3 responsive to one of the values of a transaction in the second input  
4 parameter equaling the first input parameter, returning a  
5 transaction list including the transaction having the equal  
6 value;

7 responsive to none of the values of transactions in the second input  
8 parameter equaling the first input parameter, and the second  
9 parameter containing only one transaction, returning an  
10 indicator that no match was found;

11 responsive to none of the values of transactions in the second input  
12 parameter equaling the first input parameter, and the second  
13 parameter containing more than one transaction, performing  
14 the recursive submethod using a modified first input  
15 parameter and a modified second input parameter, each  
16 modified input parameter omitting a selected transaction.

1 12. The method of claim 10, wherein performing the recursive submethod  
2 comprises:

3 responsive to one of the values of a transaction in the second input  
4 parameter equaling the first input parameter, returning a  
5 transaction list including the transaction having the equal  
6 value;  
7 responsive to none of the values of transactions in the second input  
8 parameter equaling the first input parameter, and the second  
9 parameter containing only one transaction, returning an  
10 indicator that no match was found;  
11 responsive to none of the values of transactions in the second input  
12 parameter equaling the first input parameter, and the second  
13 parameter containing more than one transaction, performing  
14 the steps of:  
15 a) selecting a transaction in the second input parameter;  
16 b) subtracting the value of the selected transaction from the  
17 first input parameter to obtain a modified first input  
18 parameter;  
19 c) generating a modified set of transactions including all  
20 transactions in the second input parameter except  
21 the selected transaction;  
22 d) performing the recursive submethod using a first input  
23 parameter including the modified first input

24 parameter and a second input parameter including  
25 the modified set of transactions;  
26 e) responsive to the recursive submethod returning a  
27 transaction list, adding the selected transaction to the  
28 returned list to generate a modified transaction list,  
29 and returning the modified transaction list;  
30 f) responsive to the recursive submethod returning an indicator  
31 that no match was found, performing the steps of:  
32 responsive to any transactions remaining in the  
33 second input parameter, repeating steps a)  
34 through f); and  
35 responsive to no transactions remaining in the  
36 second input parameter, returning an  
37 indicator that no match was found.

1 13. The method of claim 1, further comprising repeating the obtaining,  
2 determining, and indicating steps for a second transaction in the first list.

1 14. A computer-implemented method for reconciling a first combination  
2 of at least two transactions in a first list with a second combination of at least  
3 two transactions in a second list, each transaction having a value, the method  
4 comprising:  
5 obtaining each transaction in the first combination;

6 combining the obtained transactions to generate a first value;  
7 obtaining the second list of transactions;  
8 determining whether the first value corresponds to a combination of the  
9 values of a subset of transactions in the second list; and  
10 responsive to the first value corresponding to the combination of values,  
11 indicating a match between the first combination and the  
12 subset of transactions.

1 15. A computer-implemented method for matching a first value with a  
2 combination of at least two values in a list of values, the method comprising:  
3 obtaining the first value;  
4 obtaining the second list of values;  
5 performing a submethod, using a first input parameter including the first  
6 value and a second input parameter including the second list of  
7 values, to determine whether the first value corresponds to a  
8 combination of values from the second list; and  
9 responsive to the first value corresponding to the combination of values,  
10 indicating a match for the first value.

1 16. The method of claim 15, wherein the submethod is recursive, and  
2 wherein performing the recursive submethod comprises:

3 responsive to one of the values in the second input parameter equaling  
4 the first input parameter, returning a value list including the  
5 equal value;  
6 responsive to none of the values in the second input parameter equaling  
7 the first input parameter, and the second parameter containing  
8 only one value, returning an indicator that no match was  
9 found;  
10 responsive to none of the values in the second input parameter equaling  
11 the first input parameter, and the second parameter containing  
12 more than one value, performing the recursive submethod  
13 using a modified first input parameter and a modified second  
14 input parameter, each modified input parameter omitting a  
15 selected value.

1 17. The method of claim 15, wherein the submethod is recursive, and  
2 wherein performing the recursive submethod comprises:  
3 responsive to one of the values in the second input parameter equaling  
4 the first input parameter, returning a value list including the  
5 equal value;  
6 responsive to none of the values in the second input parameter equaling  
7 the first input parameter, and the second parameter containing



8                   only one value, returning an indicator that no match was  
9                   found;  
10                responsive to none of the values in the second input parameter equaling  
11                the first input parameter, and the second parameter containing  
12                more than one value, performing the steps of:  
13                a) selecting a value in the second input parameter;  
14                b) subtracting the selected value from the first input parameter  
15                       to obtain a modified first input parameter;  
16                c) generating a modified value list including all values in the  
17                       second input parameter except the selected value;  
18                d) performing the recursive submethod using a first input  
19                       parameter including the modified first input  
20                       parameter and a second input parameter including  
21                       the modified value list;  
22                e) responsive to the recursive submethod returning a value list,  
23                       adding the selected value to the returned list to  
24                       generate a modified value list, and returning the  
25                       modified value list;  
26                f) responsive to the recursive submethod returning an indicator  
27                       that no match was found, performing the steps of:

28 responsive to any values remaining in the second  
29 input parameter, repeating steps a)  
30 through f); and  
31 responsive to no values remaining in the second  
32 input parameter, returning an indicator  
33 that no match was found.

1 18. The method of claim 15, wherein each value is associated with a  
2 transaction.

1 19. The method of claim 15, wherein the submethod determines whether  
2 the first value corresponds to a combination of values from the second list.

1 20. A computer-implemented method for matching a first combination of  
2 at least two values with a second combination of at least two values in a list of  
3 values, the method comprising:

4 obtaining each value in the first combination;  
5 combining the obtained values to generate a first combined value;  
6 obtaining the second list of values;  
7 performing a recursive submethod, using a first input parameter  
8 including the first combined value and a second input  
9 parameter including the second list of values, to determine

10 whether the first combined value corresponds to a second  
11 combination of values from the second list; and  
12 responsive to the first combined value corresponding to the second  
13 combination of values, indicating a match for each value in the  
14 first combination.

1 21. A computer program product comprising a computer-usable medium  
2 having computer-readable code embodied therein for reconciling a first  
3 transaction in a first list with a combination of at least two transactions in a  
4 second list, each transaction having a value, comprising:  
5 computer-readable program code devices configured to cause a computer  
6 to obtain the first transaction;  
7 computer-readable program code devices configured to cause a computer  
8 to obtain the second list of transactions;  
9 computer-readable program code devices configured to cause a computer  
10 to determine whether the value of the first transaction  
11 corresponds to a combination of the values of a subset of  
12 transactions in the second list; and  
13 computer-readable program code devices configured to cause a computer  
14 to, responsive to the value corresponding to the combination of  
15 values, indicate a match between the first transaction and the  
16 subset of transactions.

1           22. The computer program product of claim 21, wherein each transaction  
2     comprises one selected from the group consisting of an investment transaction,  
3     a financial transaction, and an accounting transaction.

1           23. The computer program product of claim 21, wherein the computer-  
2     readable program code devices configured to cause a computer to determine  
3     whether the value of the first transaction corresponds to a combination of the  
4     values of a subset of transactions in the second list comprise computer-readable  
5     program code devices configured to cause a computer to determine whether the  
6     value of the first transaction corresponds to a sum of the values of a subset of  
7     transactions in the second list.

1           24. The computer program product of claim 21, wherein at least one of  
2     the computer-readable program code devices configured to cause a computer to  
3     obtain the first transaction and the computer-readable program code devices  
4     configured to cause a computer to obtain the second list comprises computer-  
5     readable program code devices configured to cause a computer to download  
6     transactions from a remote server.

1           25. The computer program product of claim 21, wherein at least one of  
2     the computer-readable program code devices configured to cause a computer to  
3     obtain the first transaction and the computer-readable program code devices

4 configured to cause a computer to obtain the second list comprises computer-  
5 readable program code devices configured to cause a computer to retrieve  
6 transactions from a storage device.

1 26. The computer program product of claim 21, further comprising:  
2 computer-readable program code devices configured to cause a com-  
3 puter to determine whether the value of the first transaction  
4 corresponds to a value of a transaction in the second list; and  
5 computer-readable program code devices configured to cause a computer  
6 to, responsive to the value of the first transaction  
7 corresponding to the value of a transaction in the second list,  
8 indicate a match between the first transaction and the  
9 transaction having the corresponding value;

10 and wherein the computer-readable program code devices configured to  
11 cause a computer to determine whether the value of the first transaction  
12 corresponds to a combination of the values of a subset of transactions in the  
13 second list are configured to operate responsive to the value of the first  
14 transaction not corresponding to the value of a transaction in the second list.

1 27. The computer program product of claim 21, wherein each transaction  
2 has a date, and wherein the computer-readable program code devices  
3 configured to cause a computer to obtain the second list comprise computer-

4 readable program code devices configured to cause a computer to obtain a list  
5 of transactions having dates identical to the date of the first transaction.

1 28. The computer program product of claim 21, wherein each transaction  
2 has a date, and wherein the computer-readable program code devices  
3 configured to cause a computer to obtain the second list comprise computer-  
4 readable program code devices configured to cause a computer to obtain a list  
5 of transactions having dates within a specified time period of the date of the first  
6 transaction.

1 29. The computer program product of claim 28, further comprising  
2 computer-readable program code devices configured to cause a computer to,  
3 responsive to the value of the first transaction not corresponding to a  
4 combination of the values of a subset of transactions in the second list:  
5 modify the specified time period; and  
6 repeat the steps of obtaining the second list, determine whether the value  
7 of the first transaction corresponds to a combination of the  
8 values of a subset of transactions in the second list, and,  
9 responsive to the value corresponding to the combination of  
10 values, indicate a match between the first transaction and the  
11 subset of transactions.

1           30. The computer program product of claim 21, wherein the computer-  
2   readable program code devices configured to cause a computer to determine  
3   whether the value of the first transaction corresponds to a combination of the  
4   values of a subset of transactions in the second list comprise computer-readable  
5   program code devices configured to cause a computer to perform a recursive  
6   submethod using a first input parameter including the value of the first  
7   transaction and a second input parameter including the set of transactions in the  
8   second list.

1           31. The computer program product of claim 30, wherein the computer-  
2   readable program code devices configured to cause a computer to perform the  
3   recursive submethod comprise computer-readable program code devices  
4   configured to cause a computer to:

5           responsive to one of the values of a transaction in the second input  
6                           parameter equaling the first input parameter, return a  
7                           transaction list including the transaction having the equal  
8                           value;

9           responsive to none of the values of transactions in the second input  
10                          parameter equaling the first input parameter, and the second  
11                          parameter containing only one transaction, return an indicator  
12                          that no match was found;

13 responsive to none of the values of transactions in the second input  
14 parameter equaling the first input parameter, and the second  
15 parameter containing more than one transaction, perform the  
16 recursive submethod using a modified first input parameter  
17 and a modified second input parameter, each modified input  
18 parameter omitting a selected transaction.

1 32. The computer program product of claim 30, wherein the computer-  
2 readable program code devices configured to cause a computer to perform the  
3 recursive submethod comprise computer-readable program code devices  
4 configured to cause a computer to:  
5 responsive to one of the values of a transaction in the second input  
6 parameter equaling the first input parameter, return a  
7 transaction list including the transaction having the equal  
8 value;  
9 responsive to none of the values of transactions in the second input  
10 parameter equaling the first input parameter, and the second  
11 parameter containing only one transaction, return an indicator  
12 that no match was found;  
13 responsive to none of the values of transactions in the second input  
14 parameter equaling the first input parameter, and the second



15 parameter containing more than one transaction, perform the  
16 steps of:  
17 a) selecting a transaction in the second input parameter;  
18 b) subtracting the value of the selected transaction from the  
19 first input parameter to obtain a modified first input  
20 parameter;  
21 c) generating a modified set of transactions including all  
22 transactions in the second input parameter except  
23 the selected transaction;  
24 d) performing the recursive submethod using a first input  
25 parameter including the modified first input  
26 parameter and a second input parameter including  
27 the modified set of transactions;  
28 e) responsive to the recursive submethod returning a  
29 transaction list, adding the selected transaction to the  
30 returned list to generate a modified transaction list,  
31 and returning the modified transaction list;  
32 f) responsive to the recursive submethod returning an indicator  
33 that no match was found, performing the steps of:  
34 responsive to any transactions remaining in the  
35 second input parameter, repeating steps a)  
36 through f); and

37 responsive to no transactions remaining in the  
38 second input parameter, returning an  
39 indicator that no match was found.

1 33. A computer program product comprising a computer-usable medium  
2 having computer-readable code embodied therein for reconciling a first  
3 combination of at least two transactions in a first list with a second combination  
4 of at least two transactions in a second list, each transaction having a value, the  
5 computer program product comprising:  
6 computer-readable program code devices configured to cause a computer  
7 to obtain each transaction in the first combination;  
8 computer-readable program code devices configured to cause a computer  
9 to combine the obtained transactions to generate a first value;  
10 computer-readable program code devices configured to cause a computer  
11 to obtain the second list of transactions;  
12 computer-readable program code devices configured to cause a computer  
13 to determine whether the first value corresponds to a  
14 combination of the values of a subset of transactions in the  
15 second list; and  
16 computer-readable program code devices configured to cause a computer  
17 to, responsive to the first value corresponding to the

18 combination of values, indicate a match between the first  
19 combination and the subset of transactions.

1 34. A computer program product comprising a computer-usable medium  
2 having computer-readable code embodied therein for matching a first value  
3 with a combination of at least two values in a list of values, the computer  
4 program product comprising:

5 computer-readable program code devices configured to cause a computer  
6 to obtain the first value;

7 computer-readable program code devices configured to cause a computer  
8 to obtain the second list of values;

9 computer-readable program code devices configured to cause a computer  
10 to perform a submethod, using a first input parameter  
11 including the first value and a second input parameter  
12 including the second list of values, to determine whether the  
13 first value corresponds to a combination of values from the  
14 second list; and

15 computer-readable program code devices configured to cause a computer  
16 to, responsive to the first value corresponding to the  
17 combination of values, indicate a match for the first value.

1 35. The computer program product of claim 34, wherein the submethod  
2 is recursive, and wherein the computer-readable program code devices

3 configured to cause a computer to perform the recursive submethod comprise  
4 computer-readable program code devices configured to cause a computer to:  
5 responsive to one of the values in the second input parameter equaling  
6 the first input parameter, return a value list including the equal  
7 value;  
8 responsive to none of the values in the second input parameter equaling  
9 the first input parameter, and the second parameter containing  
10 only one value, return an indicator that no match was found;  
11 responsive to none of the values in the second input parameter equaling  
12 the first input parameter, and the second parameter containing  
13 more than one value, perform the recursive submethod using a  
14 modified first input parameter and a modified second input  
15 parameter, each modified input parameter omitting a selected  
16 value.

1 36. The computer program product of claim 34, wherein the submethod  
2 is recursive, and wherein the computer-readable program code devices  
3 configured to cause a computer to perform the recursive submethod comprise  
4 computer-readable program code devices configured to cause a computer to:  
5 responsive to one of the values in the second input parameter equaling  
6 the first input parameter, return a value list including the equal  
7 value;

8 responsive to none of the values in the second input parameter equaling  
9 the first input parameter, and the second parameter containing  
10 only one value, return an indicator that no match was found;  
11 responsive to none of the values in the second input parameter equaling  
12 the first input parameter, and the second parameter containing  
13 more than one value, perform the steps of:  
14 a) selecting a value in the second input parameter;  
15 b) subtracting the selected value from the first input parameter  
16 to obtain a modified first input parameter;  
17 c) generating a modified value list including all values in the  
18 second input parameter except the selected value;  
19 d) performing the recursive submethod using a first input  
20 parameter including the modified first input  
21 parameter and a second input parameter including  
22 the modified value list;  
23 e) responsive to the recursive submethod returning a value list,  
24 adding the selected value to the returned list to  
25 generate a modified value list, and returning the  
26 modified value list;  
27 f) responsive to the recursive submethod returning an indicator  
28 that no match was found, performing the steps of:

29 responsive to any values remaining in the second  
30 input parameter, repeating steps a)  
31 through f); and  
32 responsive to no values remaining in the second  
33 input parameter, returning an indicator  
34 that no match was found.

1 37. The computer program product of claim 34, wherein each value is  
2 associated with a transaction.

1 38. The computer program product of claim 34, wherein the computer-  
2 readable program code devices configured to cause a computer to perform the  
3 submethod further comprise computer-readable program code devices  
4 configured to cause a computer to determine whether the first value  
5 corresponds to a combination of values from the second list.

1 39. A computer program product comprising a computer-usable medium  
2 having computer-readable code embodied therein for matching a first  
3 combination of at least two values with a second combination of at least two  
4 values in a list of values, the computer program product comprising:  
5 computer-readable program code devices configured to cause a computer  
6 to obtain each value in the first combination;

7 computer-readable program code devices configured to cause a computer  
8 to combine the obtained values to generate a first combined  
9 value;  
10 computer-readable program code devices configured to cause a computer  
11 to obtain the second list of values;  
12 computer-readable program code devices configured to cause a computer  
13 to perform a recursive submethod, using a first input  
14 parameter including the first combined value and a second  
15 input parameter including the second list of values, to  
16 determine whether the first combined value corresponds to a  
17 second combination of values from the second list; and  
18 computer-readable program code devices configured to cause a computer  
19 to, responsive to the first combined value corresponding to the  
20 second combination of values, indicate a match for each value  
21 in the first combination.

1 40. A system for reconciling a first transaction in a first list with a  
2 combination of at least two transactions in a second list, each transaction having  
3 a value, the system comprising:  
4 a first input device, for obtaining the first transaction;  
5 a second input device, for obtaining the second list of transactions;

6 coupled to the first and second input devices, a memory for storing the  
7 first transaction and the second list;  
8 coupled to the memory, a match determination module for determining  
9 whether the value of the first transaction corresponds to a  
10 combination of the values of a subset of transactions in the  
11 second list; and  
12 coupled to the match determination module, a match indication module  
13 for, responsive to the value corresponding to the combination  
14 of values, indicating a match between the first transaction and  
15 the subset of transactions.

1 41. The system of claim 40, wherein each transaction comprises one  
2 selected from the group consisting of an investment transaction, a personal  
3 financial transaction, and an accounting transaction.

1 42. The system of claim 40, wherein the match determination module  
2 determines whether the value of the first transaction corresponds to a sum of  
3 the values of a subset of transactions in the second list.

1 43. The system of claim 40, further comprising:  
2 coupled to the memory, a transaction matching device, for determining  
3 whether the value of the first transaction corresponds to a  
4 value of a transaction in the second list;



5 wherein the match indication module, responsive to the value of the first  
6 transaction corresponding to the value of a transaction in the second list,  
7 indicates a match between the first transaction and the transaction having the  
8 corresponding value;

9 and wherein the match determination module determines whether the  
10 value of the first transaction corresponds to a combination of the values of a  
11 subset of transactions in the second list responsive to the value of the first  
12 transaction not corresponding to the value of a transaction in the second list.

1 44. The system of claim 40, wherein each transaction has a date, and  
2 wherein the second input device obtains a list of transactions having dates  
3 identical to the date of the first transaction.

1 45. The system of claim 40, wherein each transaction has a date, and  
2 wherein the second input device obtains a list of transactions having dates  
3 within a specified time period of the date of the first transaction.

1 46. The system of claim 40, wherein the match determination module  
2 performs a recursive submethod using a first input parameter including the  
3 value of the first transaction and a second input parameter including the set of  
4 transactions in the second list.

1 47. The system of claim 46, wherein the recursive submethod comprises:

2 responsive to one of the values of a transaction in the second input  
3 parameter equaling the first input parameter, returning a  
4 transaction list including the transaction having the equal  
5 value;  
6 responsive to none of the values of transactions in the second input  
7 parameter equaling the first input parameter, and the second  
8 parameter containing only one transaction, returning an  
9 indicator that no match was found;  
10 responsive to none of the values of transactions in the second input  
11 parameter equaling the first input parameter, and the second  
12 parameter containing more than one transaction, performing  
13 the recursive submethod using a modified first input  
14 parameter and a modified second input parameter, each  
15 modified input parameter omitting a selected transaction.

1 48. The system of claim 46, wherein the recursive submethod comprises:  
2 responsive to one of the values of a transaction in the second input  
3 parameter equaling the first input parameter, returning a  
4 transaction list including the transaction having the equal  
5 value;  
6 responsive to none of the values of transactions in the second input  
7 parameter equaling the first input parameter, and the second

8 parameter containing only one transaction, returning an  
9 indicator that no match was found;  
10 responsive to none of the values of transactions in the second input  
11 parameter equaling the first input parameter, and the second  
12 parameter containing more than one transaction, performing  
13 the steps of:  
14 a) selecting a transaction in the second input parameter;  
15 b) subtracting the value of the selected transaction from the  
16 first input parameter to obtain a modified first input  
17 parameter;  
18 c) generating a modified set of transactions including all  
19 transactions in the second input parameter except  
20 the selected transaction;  
21 d) performing the recursive submethod using a first input  
22 parameter including the modified first input  
23 parameter and a second input parameter including  
24 the modified set of transactions;  
25 e) responsive to the recursive submethod returning a  
26 transaction list, adding the selected transaction to the  
27 returned list to generate a modified transaction list,  
28 and returning the modified transaction list;

29 f) responsive to the recursive submethod returning an indicator  
30 that no match was found, performing the steps of:  
31 responsive to any transactions remaining in the  
32 second input parameter, repeating steps a)  
33 through f); and  
34 responsive to no transactions remaining in the  
35 second input parameter, returning an  
36 indicator that no match was found.

1 49. A system for reconciling a first combination of at least two  
2 transactions in a first list with a second combination of at least two transactions  
3 in a second list, each transaction having a value, the system comprising:  
4 a first input device, for obtaining each transaction in the first  
5 combination;  
6 coupled to the first input device, a combination module, for combining  
7 the obtained transactions to generate a first value;  
8 a second input device, for obtaining the second list of transactions;  
9 coupled to the combination module and the second input devices, a  
10 memory for storing the first value and the second list;  
11 coupled to the memory, a match determination module for determining  
12 whether the first value corresponds to a combination of the  
13 values of a subset of transactions in the second list; and

14 coupled to the match determination module, a match indication module  
15 for, responsive to the first value corresponding to the  
16 combination of values, indicating a match between the first  
17 combination and the subset of transactions.

1 50. A system for matching a first value with a combination of at least two  
2 values in a list of values, the system comprising:  
3 a first input device, for obtaining the first value;  
4 a second input device, for obtaining the second list of values;  
5 coupled to the input devices, a memory for storing the first value and the  
6 second list;  
7 coupled to the memory, a recursive function module, for performing a  
8 recursive function, using a first input parameter including the  
9 first value and a second input parameter including the second  
10 list of values, to determine whether the first value corresponds  
11 to a combination of values from the second list; and  
12 coupled to the recursive function module, a match indicator for,  
13 responsive to the first value corresponding to the combination  
14 of values, indicating a match for the first value.

1 51. The system of claim 50, wherein the recursive function module:  
2 responsive to one of the values of a transaction in the second input  
3 parameter equaling the first input parameter, returns a

4 transaction list including the transaction having the equal  
5 value;  
6 responsive to none of the values of transactions in the second input  
7 parameter equaling the first input parameter, and the second  
8 parameter containing only one transaction, returns an indicator  
9 that no match was found;  
10 responsive to none of the values of transactions in the second input  
11 parameter equaling the first input parameter, and the second  
12 parameter containing more than one transaction, performs the  
13 recursive submethod using a modified first input parameter  
14 and a modified second input parameter, each modified input  
15 parameter omitting a selected transaction.

1 52. The system of claim 50, wherein the recursive function module:  
2 responsive to one of the values in the second input parameter equaling  
3 the first input parameter, returns a value list including the  
4 equal value;  
5 responsive to none of the values in the second input parameter equaling  
6 the first input parameter, and the second parameter containing  
7 only one value, returns an indicator that no match was found;

8 responsive to none of the values in the second input parameter equaling  
9 the first input parameter, and the second parameter containing  
10 more than one value, performs the steps of:  
11 a) selecting a value in the second input parameter;  
12 b) subtracting the selected value from the first input parameter  
13 to obtain a modified first input parameter;  
14 c) generating a modified value list including all values in the  
15 second input parameter except the selected value;  
16 d) performing the recursive submethod using a first input  
17 parameter including the modified first input  
18 parameter and a second input parameter including  
19 the modified value list;  
20 e) responsive to the recursive submethod returning a value list,  
21 adding the selected value to the returned list to  
22 generate a modified value list, and returning the  
23 modified value list;  
24 f) responsive to the recursive submethod returning an indicator  
25 that no match was found, performing the steps of:  
26 responsive to any values remaining in the second  
27 input parameter, repeating steps a)  
28 through f); and

29 responsive to no values remaining in the second  
30 input parameter, returning an indicator  
31 that no match was found.

1 53. The system of claim 50, wherein each value is associated with a  
2 transaction.

1 54. A system for matching a first combination of at least two values with  
2 a second combination of at least two values in a list of values, the system  
3 comprising:  
4 a first input device, for obtaining each value in the first combination;  
5 coupled to the first input device, a combination module, for combining  
6 the obtained values to generate a first combined value;  
7 a second input device, for obtaining the second list of values;  
8 coupled to the combination module and the second input devices, a  
9 memory for storing the first value and the second list;  
10 coupled to the memory, a recursive function module, for performing a  
11 recursive function, using a first input parameter including the  
12 first combined value and a second input parameter including  
13 the second list of values, to determine whether the first  
14 combined value corresponds to a second combination of values  
15 from the second list; and



16 coupled to the recursive function module, a match indicator for,  
17 responsive to the first combined value corresponding to the  
18 second combination of values, indicating a match for each  
19 value in the first combination.